



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,807	10/27/2003	Naoya Kamiyama	117597	9678
25944 7590 01/11/2007 OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER CRAIG, DWIN M	
			ART UNIT 2123	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/692,807

Applicant(s)

KAMIYAMA, NAOYA

Examiner

Dwin M. Craig

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/27/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. The information disclosure statement (IDS) submitted on 10/27/2003 fails to comply with the provisions of 37 C.F.R. 1.97, 1.98 and MPEP § 609 because reference 1 was not submitted with a translated abstract. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements under 37 C.F.R. 1.97(e). See MPEP § 609.

Claims herein under examination are 1-13.

Specification

2. A substitute specification excluding the claims is required pursuant to 37 CFR 1.125(a) because the current specification is replete with awkward and grammatically improper sentence structures.

Examples of improper sentences;

Page 1, lines 11-17, "... for storing operation information in which information about operation for setting data to be transmitted..." this sentence is confusing in that it repeats the same information in a different order, *operation information* followed by *information about operation* appear to describe the same thing and yet the phrase is repeated in a different order.

Page 3 lines 9-21, "...In order to attain the object, a simulation apparatus..." should read, "...In order to attain the *objective* a simulation apparatus..."

Page 4 lines 7-10, "...In addition, there is no fear that the amount of data increases in accordance with the storing period or the storing time as in the case where data is always stored in time series..." The sentence appears to change tense and is awkward and confusing, a clearer version of the sentence would read, "*In addition, there is no fear that as the amount of data increases during the storing period the data integrity will be compromised because the data is always stored in a time series.*"

Page 25 lines 1-7 "...Thus, event data registered as signal waveform data in advance can be used during execution of simulation..." should read, "Thus, waveform data that has been stored as registered event data can be used during the execution of the simulation..."

"...In addition, event data (time or a value of data at that time) can be easily edited into predetermined data using test display through an editor. In addition, setting operation indicated by the edited event data can be played back..." The second sentence is a sentence fragment and the first sentence is awkward and requires revision, here are examples of how the sentences could be re-written, "In addition, the event data (either event time stamp or the actual event data recorded during the event time stamp) can be easily edited using the text editor using the test display, further once the event data is edited the playback can continue."

These are only examples within the specification, a complete review and rewrite of the specification is required.

Art Unit: 2123

2.1 A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

2.2 A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. An accompanying clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

3.1 Claims 1-13 are directed to a simulation apparatus and method. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result.

Art Unit: 2123

Specifically, the claimed subject matter does not produce a useful result because the claimed subject matter fails to sufficiently reflect at least one practical utility set forth in the descriptive portion of the specification. More specifically, while the described practical utility is directed to simulating an internal combustion engine for the purpose of determining if the pollution control system is functioning properly, the claimed subject matter relates only to a data structure to store event data in a simulation.

3.2 Claim 13 is directed to a method. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for a time setting operation. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation "the setting operation" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the data" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-5 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,535,620 to Nichols in view of "The design of history mechanisms and their use in collaborative educational simulations" by Catherine Plaisant, Anne Rose, Gary Rubloff, Richard Salter and Ben Shneiderman hereafter referred to as Plaisant.
- 5.1 Regarding claim 1 Nichols teaches, a simulation apparatus comprising (Figures 1 & 2 and the descriptive text): an output data setting section for setting data (Col. 2 lines 32-50 and Col. 2

lines 57-67 "...user defined inputs to the engine management system jointly control the engine" and Col. 4 lines 45-67 and Col. 5 lines 1-10 and Col. 5 lines 18-38 "This flag is generated based on user supplied input as to the cycle pattern for the test..." data is being set based on the user input and this is output data because the data being set creates a simulated *exhaust* or output condition, see Col. 5 line 6 "...simulated exhaust gas signals..."),

which is output to a control target during execution of simulation (Col. 5 lines 25-27 "...the engine control module or engine management system controls the injectors..." see also Col. 6 lines 9-37); a data output section for supplying the control target with output data created on the basis of the data set through the output data setting section (Col. 6 lines 23-65 the ignition control signals based on the simulated input are controlling the engine and the simulated exhaust gases are an output that is the basis for the result of the simulation).

However Nichols does not expressly disclose, a storage section; an event data storage section for storing into the storage section as event data: a time when the setting operation is carried out; a value of the data at the time; and information about the data, when setting operation of the data through the output data setting section is detected. (The Examiner has interpreted Applicant's claim language to teach a data structure used in a simulation, including a time stamp, to record data for playback, therefore any simulation system that teaches a time stamp for recorded data reads on the current claim language)

Plaisant teaches time-stamps for historical data used for playback including time stamps (7th page "Adding a time stamp is easy, but recording the state of the simulation at that time can pose problems, unless the design accommodates efficient history recording." When recording the simulation state this teaching clearly provides the requirement for data structures, including a

Art Unit: 2123

time field, as expressly claimed and further other fields which would include a **value** of the data at the time of the *time* stamp and more **information** about the data, for example Plaisant teaches using the Delphi programming environment where objects are instantiated and further these objects are highly typed as known in the Object oriented programming arts therefore, having this knowledge of an artisan of ordinary skill, when implementing the methods and teachings of Plaisant, would know **information about the data** such as is the data a floating point type of data or an integer type of data or a pointer to an object? Further and regarding data structures also on page 7 Plaisant teaches, "Can history data structures or visual representations be generalized across platforms" and on page 8, "A learning history for this domain need only consider high-level time stamped events: Active events: actions on the simulation (e.g. open valve, turn on pump, etc.) or annotations (written comments or audio notes); Reactive events: messages (e.g. errors) or status reports (e.g. stable pressure reached, 50% of desired vacuum level reached); Modeling events: user modifications of simulation parameters.") and a storage section (page 6 "A complete record of all events that occur during a session certainly would provide a sufficient database for any history function...").

Nichols and Plaisant are from the same problem solving area of simulating physical systems.

At the time of the invention it would have been obvious, to one of ordinary skill to have combined the engine simulation apparatus of Nichols with the simulation recording and playback methods of Plaisant.

The suggestion for doing so would have been to provide for a method to record and playback simulation histories as disclosed in the abstract of Plaisant and further the advantage of

Art Unit: 2123

being able to annotate different events during the playback which provides the advantage of being able to experiment with different possible outcomes of the simulation without having to completely rerun the entire simulation, further there is the advantage of being able to collaborate with other designers/engineers during the test and evaluation stage of system development that Plaisant clearly teaches, see the section on page 12 labeled "Results" and note the discussion on how adding annotations and how these annotations "*embellished the presentation*". Further, the methods thus disclosed provide a mechanism for on-line collaboration of a system being evaluated and therefore provides a further advantage of different members of a design team being able to work on the same project from different locations.

Therefore, it would have been obvious to combine Plaisant with Nichols to obtain the invention specified in claims 1-5 and 7-13.

5.2 Regarding claim 2, Nichols does not expressly disclose *an event playback section for: reading the event data stored in the storage section; supplying the control target with output data created on the basis of based on analysis of the event data; and playing back the setting operation indicated by the event data.*

However, Plaisant teaches (Figure 1 page 4 & Figure 3 on page 9 and the descriptive text on pages 8-11).

5.3 Regarding claim 3, Nichols does not expressly disclose, *wherein the event playback section starts playing back the setting operation at timing indicated by a user.*

However, Plaisant teaches the section called "History features" on page 10 and see Figure 4.

Art Unit: 2123

5.4 Regarding claim 4, Nichols does not expressly disclose, *wherein the event playback section starts playing back the setting operation automatically when predetermined data is detected.*

However, Plaisant teaches page 10 “Session histories can be played immediately, edited, or saved for later recall and replay...” see the rest of the descriptive text presented on page 10 as well.

5.5 Regarding claim 5, Nichols does not expressly disclose *a waiting time setting section for setting a waiting time till starting playing back the setting operation, wherein the event playback section starts the playback when the waiting time set by the waiting time setting section has passed.*

However, Plaisant teaches page 10 “Session histories can be played immediately, edited, or saved for later recall and replay...” see the rest of the descriptive text presented on page 10 as well. Clearly this section of Plaisant is providing a teaching of the flexibility of the simulation history editing software as clearly taught and the ability to control when and how the simulation histories are played back.

5.6 Regarding claim 7, Nichols does not expressly disclose *an event data editing section for editing the event data stored in the storage section.*

However, Plaisant teaches page Figure 1 on page 4 more specifically, “While users manipulate the controls of the simulation (top left section), actions are recorded (bottom right section). **Comments** can be **added** during or after recording.” Adding comments is the functional equivalent of editing.

Art Unit: 2123

5.7 Regarding claim 8, Nichols teaches the editing of waveforms (figures 2 and 3 & the descriptive text).

5.8 Regarding claim 9, Nichols does not expressly disclose a storage section however, storage of data is very well known in the art and further Plaisant clearly teaches storing simulation histories (page 4, “persistent data structures...”).

5.9 Regarding claim 10, Nichols does not expressly disclose *the event data editing section includes a text data editing section for editing the read event data into predetermined data; and the event playback section plays back the setting operation indicated by the event data edited through the text data editing section.*

However, Plaisant clearly teaches an event editing section and entering text, see pages 5 Figure 2 and the section entitled “Annotation”.

5.10 Regarding claim 11 see the rejection of claim 1.

5.11 Regarding claim 12, see the rejection of claim 1.

5.12 Regarding claim 13, see the rejection of claim 1.

Possible indication of Allowable subject matter

6. Claim 6 has not been rejected with art at this time however, the Examiner will hold in abeyance any indication of allowable subject matter pending the response to the 35 U.S.C. 101 rejections presented above.

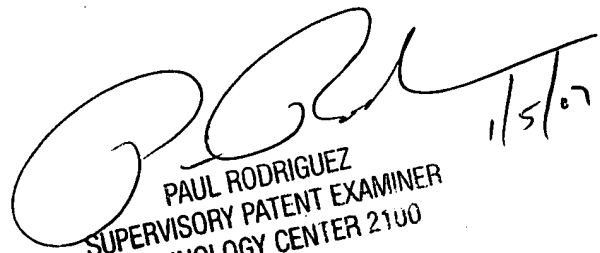
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwain M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dwain McTaggart Craig


PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100
1/5/07